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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,446

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Reinhard Wormuth

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PATENT DEPARTMENT
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EXAMINER

GOLOBOY, JAMES C

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,446	Applicant(s) WORMUTH ET AL.	
	Examiner James Goloboy	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/2/05 & 6/2/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/9/05, 4/14/08, 6/2/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Use Claims

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 29, 31 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 29, 31 and 35 provide for the use of a composition and a metal sheet, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 31 and 35 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App.

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1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

In order to overcome this rejection, it is advised that the applicant change “use” language in Claim 18 to “process of using”, and add process steps.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 11, 18-21, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Bereday (U.S. Pat. No. 3,734,784).

Bereday, in column 1 lines 14-24, discloses a treated aluminum surface comprising an organic film. In column 5 lines 53-75, especially lines 73-74, Bereday discloses that the film can be derived from organic phosphates, as recited in claim 1. In column 18 lines 62-64 Bereday teaches that further layers can be placed on top of the organic layer, and from column 19 line 73 through column 20 line 5 discloses that this further layer can be a lubricant layer, meeting the limitations of claim 11. The treated aluminum surfaces of Bereday therefore meet the limitations of claims 1 and 31, and the method of preparing the surfaces meets the limitations of claim 18.

In Table 1, Bereday discloses that the phosphate can be lauryl acid phosphate, meeting the limitations of the phosphate of claim 2 where X is hydrogen, R is an alkyl group with 12 carbon atoms, and n is 1.

In column 6 lines 41-48, Bereday discloses that the phosphate layer can be formed by dipping the aluminum in a dilute acid, meeting the limitations of claims 19 and 21, or in an aqueous bath, meeting the limitations of claim 20.

7. Claims 1-2, 18-19, 21, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Awad (U.S. Pat. No. 5,064,500).

In column 2 lines 4-41, Awad discloses an aluminum surface conditioned to impart a lower coefficient of friction, where the surface is treated by contacting with a phosphate ester (structure I of Awad). As the coating reduces the coefficient of friction, it is considered to be a lubricant coating, and the treated metal sheet therefore meets the limitations of claims 1 and 31. The phosphate of Awad's structure I meets the limitation of the phosphate of claim 2.

The method of forming the metal sheet of Awad meets the limitations of claim 18. In column 4 lines 11-12 Awad discloses that the solution can be applied by immersion or spraying, as recited in claim 19. In column 3 lines 61-68 Awad discloses that the an aqueous solution containing the phosphoric acid ester is used, as recited in claim 21.

8. Claim 1-2, 4, 10-14, 16, 18-19, 22, 24, 28-30, and 35 is rejected under 35 U.S.C. 102(b) as being anticipated by Prince (WO 01/59045).

On page 1 lines 5-7, Prince discloses a water-soluble hot rolling composition for aluminum and aluminum alloys. In Table 1 (page 7) Prince discloses a composition comprising trioctylphosphate, meeting the limitations of the phosphoric acid esters of

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claims 1-2. The composition further contains petroleum sulfonate, an organic sulfur compound as recited in claim 4. The phosphate and sulfur compounds are present in amounts within the ranges recited in claims 13-14, and further contains organic compounds in concentrations within the ranges recited in claim 16. On page 13 lines 1-5 Prince discloses that the composition is applied in an amount of 1.15g/m^2 , within the range recited in claim 12. As the composition meets the compositional limitations of the claim and is applied in this amount, the resulting layer will be a nano layer, as recited in claim 10. The sheet containing the coating composition therefore meets the limitations of claims 1-2, 4, 11, 13-14, 16, and 31. As the composition is applied to the metal sheet, Prince also meets the limitations of claims 18-19, 22, 24, and 29-30. On page 10 lines 16-17 Prince teaches that the aluminum surfaces are heated to 454°C before use, which will have the effect of drying the sheet as recited in claim 28. The coated metal sheets are used in hot rolling, which is a forming operation as recited in claim 35.

9. Claims 1 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Wysong (U.S. Pat. No. 5,650,097).

In column 1 lines 8-11, Wysong discloses providing steel with corrosion protection and lubricity. In the examples in columns 4-9, Wysong teaches that this is accomplished by coating the steel with a composition comprising an organic phosphoric acid ester, therefore meeting the limitations of claims 1 and 17. The coating can be carried out by dipping or spraying, meeting the limitations of claims 18-19.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wysong.

The discussion of Wysong in paragraph 9 above is incorporated here by reference. Wysong discloses metal sheets meeting the limitations of claim 1, but not containing the specific phosphates of claims 2-3.

In column 2 lines 36-49, Wysong discusses the alkylphosphates present in the coating composition, and teaches that the R groups are alkyl groups having 4 to 20 carbon atoms, overlapping the range recited in claim 2, and encompassing the number of carbon atoms in the phosphates of claim 3. See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie

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case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976);”

13. Claims 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awad.

The discussion of Awad in paragraph 7 above is incorporated here by reference. Awad discloses a metal sheet meeting the limitations of claim 1 and a method meeting the limitations of claim 18 but does not teach a concentration of phosphoric acid ester within the claimed ranges.

In column 3 lines 61-68, Awad teaches that the composition contains a total of 0.001 to 10% by weight of additives. The potential concentrations of phosphoric acid ester therefore overlap the ranges recited in claims 13 and 22. See MPEP 2144.05(I): “In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976);”

14. Claims 4-6, 14, and 24-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Bereday in view of Nassry (U.S. Pat. No. 4,313,836).

The discussion of Bereday in paragraph 6 above is incorporated here by reference. Bereday discloses an aluminum sheet meeting the limitations of claim 1, but not further containing a sulfur compound.

Nassry, in column 3 lines 28-33, discloses a metalworking lubricant comprising a phosphate ester. In Table I (column 6 lines 20-32), Nassry teaches that concentrates for the preparation of these lubricants, and therefore the lubricants themselves, can contain sodium-2-mercaptobenzothiazole, meeting the limitations of the sulfur compounds of claims 4-6 and 24. As the concentrate contains the sulfur compound in an amount of 7 to 21% by weight, and Nassry teaches in column 6 lines 6-8 that the concentrate is present in an amount of 1 to 25% by weight of the total composition, the concentration of the sulfur compound in the total composition will overlap the ranges recited in claims 14 and 25.

15. Claims 4, 7, 9, 15, 24-27, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bereday in view of Natalie (U.S. Pat. No. 4,846,898).

The discussion of Bereday in paragraph 6 above is incorporated here by reference. Bereday discloses an aluminum sheet meeting the limitations of claim 1, but not further containing a molybdenum compound.

Natalie, in column 2 lines 5-14, discloses a method of rendering an aluminum surface resistant to water staining by providing a coating comprising a molybdate. In the reference's claim 1, Natalie teaches that the molybdenum compound can be an organic or inorganic molybdate, as recited in claims 4, 7, 9, 24-26, and 32-33. The molybdate can be an amine or alkanolamine molybdate, as recited in claim 32. In column 8 lines 30-34, Natalie teaches that the sodium molybdate is useful when applied in an "effective amount". It is the examiner's position that the concentration of molybdate is a result effective variables because changing them will clearly affect the type of product

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obtained. See MPEP § 2144.05 (B). Case law holds that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to include the molybdates of Natalie in the coating composition of Bereday in order to prevent water staining on the aluminum surface.

16. Claims 4, 7, 9, 15, 24-27, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awad in view of Natalie (U.S. Pat. No. 4,846,898).

The discussion of Awad in paragraph 7 above is incorporated here by reference. Awad discloses an aluminum sheet meeting the limitations of claim 1, but not further containing a molybdenum compound. Awad further teaches in column 4 lines 38-46 a concentrate for the manufacture of the composition, as in claim 34.

Natalie, in column 2 lines 5-14, discloses a method of rendering an aluminum surface resistant to water staining by providing a coating comprising a molybdate. In the reference’s claim 1, Natalie teaches that the molybdenum compound can be an organic or inorganic molybdate, as recited in claims 4, 7, 9, 24-26, and 32-33. The molybdate can be an amine or alkanolamine molybdate, as recited in claim 32. In column 8 lines 30-34, Natalie teaches that the sodium molybdate is useful when applied in an “effective amount”. It is the examiner’s position that the concentration of molybdate is a result effective variables because changing them will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that “discovery of an optimum

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value of a result effective variable in a known process is ordinarily within the skill of the art.” See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to include the molybdates of Natalie in the coating composition of Awad in order to prevent water staining on the aluminum surface.

17. Claims 8-9, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bereday in view of Bibber (U.S. Pat. No. 4,878,963).

The discussion of Bereday in paragraph 6 above is incorporated here by reference. Bereday discloses an aluminium sheet meeting the limitations of claim 1, but not further containing the inorganic compounds of claims 8-9 and 26. Bereday also does not disclose the pH of the composition.

Bibber, in column 2 lines 61-65 discloses a phosphate coating for aluminum sheets, such as those of Bereday. Bibber discloses that the phosphate is added in a solution having a pH of 7 to 12.5, overlapping the range recited in claim 23. In column 3 lines 11-13 Bibber discloses that the composition can contain borates, as recited in claims 8 and 26. Bibber teaches that these borates can be alkali metal tetraborates, and in column 3 lines 30-31 teaches that the alkali metal can be sodium, resulting in sodium tetraborate as recited in claim 9.

It would have been obvious to one of ordinary skill in the art to maintain the phosphorus-containing solution of Bereday at the pH taught by Bibber, as Bibber teaches that it is a preferable pH for a phosphate coating for aluminum. It would have

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been obvious to one of ordinary skill in the art to include the borates of Bibber, including sodium tetraborate, as a buffer in order to maintain the preferred pH.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is (571)272-2476. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCG

/Glenn A Caldarola/
Acting SPE of Art Unit 1797